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<110>   Armour, Christopher D
        Castle, John C
        Garrett-Engele, Phillip W
        Kan, Zhengyan
        Loerch, Patrick M
        Tsinoremas, Nicholas F

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<151>   2003-04-23

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Glu Thr  Glu Glu Glu Leu Lys   Val Ala His Cys Cys   Leu Lys Glu
    1475             1480                 1485


Gln Glu  Glu Thr Ile Asn Glu   Leu Arg Val Asn Leu   Ser Glu Lys
    1490             1495                 1500


Glu Thr  Glu Ile Ser Thr Ile   Gln Lys Gln Leu Glu   Ala Ile Asn
    1505             1510                 1515


Asp Lys  Leu Gln Asn Lys Ile   Gln Glu Ile Tyr Glu   Lys Glu Glu
    1520             1525                 1530


Gln Leu  Asn Ile Lys Gln Ile   Ser Glu Val Gln Glu   Asn Val Asn
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Glu Leu  Lys Gln Phe Lys Glu   His Arg Lys Ala Lys   Asp Ser Ala
    1550             1555                 1560


Leu Gln  Ser Ile Glu Ser Lys   Met Leu Glu Leu Thr   Asn Arg Leu
    1565             1570                 1575


Gln Glu  Ser Gln Glu Glu Ile   Gln Ile Met Ile Lys   Glu Lys Glu
    1580             1585                 1590


Glu Met  Lys Arg Val Gln Glu   Ala Leu Gln Ile Glu   Arg Asp Gln
    1595             1600                 1605


Leu Lys  Glu Asn Thr Lys Glu   Ile Val Ala Lys Met   Lys Glu Ser
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Gln Glu  Lys Glu Tyr Gln Phe   Leu Lys Met Thr Ala   Val Asn Glu
    1625             1630                 1635
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Thr Gln   Glu Lys Met Cys Glu   Ile Glu His Leu Lys   Glu Gln Phe
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Glu Thr   Gln Lys Leu Asn Leu   Glu Asn Ile Glu Thr   Glu Asn Ile
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Arg Leu   Thr Gln Ile Leu His   Glu Asn Leu Glu Glu   Met Arg Ser
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Val Thr   Lys Glu Arg Asp Asp   Leu Arg Ser Val Glu   Glu Thr Leu
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Lys Val   Glu Arg Asp Gln Leu   Lys Glu Asn Leu Arg   Glu Thr Ile
    1700                  1705               1710

Thr Arg   Asp Leu Glu Lys Gln   Glu Glu Leu Lys Ile   Val His Met
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His Leu   Lys Glu His Gln Glu   Thr Ile Asp Lys Leu   Arg Gly Ile
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Val Ser   Glu Lys Thr Asn Glu   Ile Ser Asn Met Gln   Lys Asp Leu
    1745                  1750               1755

Glu His   Ser Asn Asp Ala Leu   Lys Ala Gln Asp Leu   Lys Ile Gln
    1760                  1765               1770

Glu Glu   Leu Arg Ile Ala His   Met His Leu Lys Glu   Gln Gln Glu
    1775                  1780               1785

Thr Ile   Asp Lys Leu Arg Gly   Ile Val Ser Glu Lys   Thr Asp Lys
    1790                  1795               1800

Leu Ser   Asn Met Gln Lys Asp   Leu Glu Asn Ser Asn   Ala Lys Leu
    1805                  1810               1815

Gln Glu   Lys Ile Gln Glu Leu   Lys Ala Asn Glu His   Gln Leu Ile
    1820                  1825               1830

Thr Leu   Lys Lys Asp Val Asn   Glu Thr Gln Lys Lys   Val Ser Glu
    1835                  1840               1845

Met Glu   Gln Leu Lys Lys Gln   Ile Lys Asp Gln Ser   Leu Thr Leu
    1850                  1855               1860
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Ser Lys  Leu Glu Ile Glu Asn  Leu Asn Leu Ala Gln  Glu Leu His
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Glu Asn  Leu Glu Glu Met Lys  Ser Val Met Lys Glu  Arg Asp Asn
    1880             1885                 1890

Leu Arg  Arg Val Glu Glu Thr  Leu Lys Leu Glu Arg  Asp Gln Leu
    1895             1900                 1905

Lys Glu  Ser Leu Gln Glu Thr  Lys Ala Arg Asp Leu  Glu Ile Gln
    1910             1915                 1920

Gln Glu  Leu Lys Thr Ala Arg  Met Leu Ser Lys Glu  His Lys Glu
    1925             1930                 1935

Thr Val  Asp Lys Leu Arg Glu  Lys Ile Ser Glu Lys  Thr Ile Gln
    1940             1945                 1950

Ile Ser  Asp Ile Gln Lys Asp  Leu Asp Lys Ser Lys  Asp Glu Leu
    1955             1960                 1965

Gln Lys  Lys Asp Arg Gln Asn  His Gln Val Lys Pro  Glu Lys Arg
    1970             1975                 1980

Leu Leu  Ser Asp Gly Gln Gln  His Leu Met Glu Ser  Leu Arg Glu
    1985             1990                 1995

Lys Cys  Ser Arg Ile Lys Glu  Leu Leu Lys Arg Tyr  Ser Glu Met
    2000             2005                 2010

Asp Asp  His Tyr Glu Cys Leu  Asn Arg Leu Ser Leu  Asp Leu Glu
    2015             2020                 2025

Lys Glu  Ile Glu Phe His Arg  Ile Met Lys Lys Leu  Lys Tyr Val
    2030             2035                 2040

Leu Ser  Tyr Val Thr Lys Ile  Lys Glu Glu Gln His  Glu Cys Ile
    2045             2050                 2055

Asn Lys  Phe Glu Met Asp Phe  Ile Asp Glu Val Glu  Lys Gln Lys
    2060             2065                 2070
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Glu Leu  Leu Ile Lys Ile Gln  His Leu Gln Gln Asp  Cys Asp Val
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Pro Ser  Arg Glu Leu Arg Asp  Leu Lys Leu Asn Gln  Asn Met Asp
    2090             2095             2100

Leu His  Ile Glu Glu Ile Leu  Lys Asp Phe Ser Glu  Ser Glu Phe
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Pro Ser  Ile Lys Thr Glu Phe  Gln Gln Val Leu Ser  Asn Arg Lys
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Glu Met  Thr Gln Phe Leu Glu  Glu Trp Leu Asn Thr  Arg Phe Asp
    2135             2140             2145

Ile Glu  Lys Leu Lys Asn Gly  Ile Gln Lys Glu Asn  Asp Arg Ile
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Cys Gln  Val Asn Asn Phe Phe  Asn Asn Arg Ile Ile  Ala Ile Met
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Asn Glu  Ser Thr Glu Phe Glu  Glu Arg Ser Ala Thr  Ile Ser Lys
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Glu Trp  Glu Gln Asp Leu Lys  Ser Leu Lys Glu Lys  Asn Glu Lys
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Leu Phe  Lys Asn Tyr Gln Thr  Leu Lys Thr Ser Leu  Ala Ser Gly
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Ala Gln  Val Asn Pro Thr Thr  Gln Asp Asn Lys Asn  Pro His Val
    2225             2230             2235

Thr Ser  Arg Ala Thr Gln Leu  Thr Thr Glu Lys Ile  Arg Glu Leu
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Glu Asn  Ser Leu His Glu Ala  Lys Glu Ser Ala Met  His Lys Glu
    2255             2260             2265

Ser Lys  Ile Ile Lys Met Gln  Lys Glu Leu Glu Val  Thr Asn Asp
    2270             2275             2280

Ile Ile  Ala Lys Leu Gln Ala  Lys Val His Glu Ser  Asn Lys Cys
    2285             2290             2295
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Met Lys Leu Val Lys Ile Asp Leu Glu Lys Met Lys Asn Ala Lys
    2330   2335   2340

Glu Phe Glu Lys Glu Ile Ser Ala Thr Lys Ala Thr Val Glu Tyr
    2345   2350   2355

Gln Lys Glu Val Ile Arg Leu Leu Arg Glu Asn Leu Arg Arg Ser
    2360   2365   2370

Gln Gln Ala Gln Asp Thr Ser Val Ile Ser Glu His Thr Asp Pro
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Gln Pro Ser Asn Lys Pro Leu Thr Cys Gly Gly Gly Ser Gly Ile
    2390   2395   2400

Val Gln Asn Thr Lys Ala Leu Ile Leu Lys Ser Glu His Ile Arg
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Leu Glu Lys Glu Ile Ser Lys Leu Lys Gln Gln Asn Glu Gln Leu
    2420   2425   2430

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Asn Glu Val Lys Thr Trp Lys Glu Arg Thr Leu Lys Arg Glu Ala
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His Lys Gln Val Thr Cys Glu Asn Ser Pro Lys Ser Pro Lys Val
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Thr Gly Thr Ala Ser Lys Lys Lys Gln Ile Thr Pro Ser Gln Cys
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Ser Cys Phe Phe Asp Ser Arg Ser Lys Ser Leu Pro Ser Pro His
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Pro Val Arg Tyr Phe Asp Asn Ser Ser Leu Gly Leu Cys Pro Glu
    2525   2530   2535

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Lys Thr His Lys Leu Ser Ile Asn Leu Leu Arg Glu Ile Asp Glu Ser
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Val Cys Ser Glu Ser Asp Val Phe Ser Asn Thr Leu Asp Thr Leu Ser
465   470   475   480

Glu Ile Glu Trp Asn Pro Ala Thr Lys Leu Leu Asn Gln Glu Asn Ile
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Glu Ser Glu Leu Asn Ser Leu Arg Ala Asp Tyr Asp Asn Leu Val Leu
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Lys Glu Lys Asn Asp Leu Asp Glu Phe Glu Ala Leu Glu Arg Lys Thr
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Lys Lys Asp Gln Glu Asn Glu Leu Ser Ser Lys Val Glu Leu Leu Arg
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Glu Lys Glu Asp Gln Ile Lys Lys Leu Gln Glu Tyr Ile Asp Ser Gln
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Lys Leu Glu Asn Ile Lys Met Asp Leu Ser Tyr Ser Leu Glu Ser Ile
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Glu Asp Pro Lys Gln Met Lys Gln Thr Leu Phe Asp Ala Glu Thr Val
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Ala Leu Asp Ala Lys Arg Glu Ser Ala Phe Leu Arg Ser Glu Asn Leu
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Glu Leu Lys Glu Lys Met Lys Glu Leu Ala Thr Thr Tyr Lys Gln Met
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Glu Asn Asp Ile Gln Leu Tyr Gln Ser Gln Leu Glu Ala Lys Lys Lys
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Met Gln Val Asp Leu Glu Lys Glu Leu Gln Ser Ala Phe Asn Glu Ile
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Thr Lys Leu Thr Ser Leu Ile Asp Gly Lys Val Pro Lys Asp Leu Leu
        675             680             685


Cys Asn Leu Glu Leu Glu Gly Lys Ile Thr Asp Leu Gln Lys Glu Leu
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Asn Lys Glu Val Glu Glu Asn Glu Ala Leu Arg Glu Glu Val Ile Leu
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Leu Ser Glu Leu Lys Ser Leu Pro Ser Glu Val Glu Arg Leu Arg Lys
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Glu Ile Gln Asp Lys Ser Glu Glu Leu His Ile Ile Thr Ser Glu Lys
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Asp Lys Leu Phe Ser Glu Val Val His Lys Glu Ser Arg Val Gln Gly
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Leu Leu Glu Glu Ile Gly Lys Thr Lys Asp Asp Leu Ala Thr Thr Gln
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Ser Asn Tyr Lys Ser Thr Asp Gln Glu Phe Gln Asn Phe Lys Thr Leu
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His Met Asp Phe Glu Gln Lys Tyr Lys Met Val Leu Glu Glu Asn Glu
            805   810   815

Arg Met Asn Gln Glu Ile Val Asn Leu Ser Lys Glu Ala Gln Lys Phe
            820   825   830

Asp Ser Ser Leu Gly Ala Leu Lys Thr Glu Leu Ser Tyr Lys Thr Gln
            835   840   845

Glu Leu Gln Glu Lys Thr Arg Glu Val Gln Glu Arg Leu Asn Glu Met
    850   855   860

Glu Gln Leu Lys Glu Gln Leu Glu Asn Arg Asp Ser Pro Leu Gln Thr
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Val Glu Arg Glu Lys Thr Leu Ile Thr Glu Lys Leu Gln Gln Thr Leu
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Glu Glu Val Lys Thr Leu Thr Gln Glu Lys Asp Asp Leu Lys Gln Leu
            900   905   910

Gln Glu Ser Leu Gln Ile Glu Arg Asp Gln Leu Lys Ser Asp Ile His
    915   920   925

Asp Thr Val Asn Met Asn Ile Asp Thr Gln Glu Gln Leu Arg Asn Ala
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Leu Glu Ser Leu Lys Gln His Gln Glu Thr Ile Asn Thr Leu Lys Ser

945   950   955 .   960

Lys Ile Ser Glu Glu Val Ser Arg Asn Leu His Met Glu Glu Asn Thr
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Gly Glu Thr Lys Asp Glu Phe Gln Gln Lys Met Val Gly Ile Asp Lys
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Lys Gln Asp Leu Glu Ala Lys Asn Thr Gln Thr Leu Thr Ala Asp Val
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Lys Asp Asn Glu Ile Ile Glu Gln Gln Arg Lys Ile Phe Ser Leu
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Ile Gln Glu Lys Asn Glu Leu Gln Gln Met Leu Glu Ser Val Ile
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Ala Glu Lys Glu Gln Leu Lys Thr Asp Leu Lys Glu Asn Ile Glu
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Met Thr Ile Glu Asn Gln Glu Glu Leu Arg Leu Leu Gly Asp Glu
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Leu Lys Lys Gln Gln Glu Ile Val Ala Gln Glu Lys Asn His Ala
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Ile Lys Lys Glu Gly Glu Leu Ser Arg Thr Cys Asp Arg Leu Ala
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Glu Val Glu Glu Lys Leu Lys Glu Lys Ser Gln Gln Leu Gln Glu
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Lys Gln Gln Gln Leu Leu Asn Val Gln Glu Glu Met Ser Glu Met
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Gln Lys Lys Ile Asn Glu Ile Glu Asn Leu Lys Asn Glu Leu Lys
    1130   1135   1140

Asn Lys Glu Leu Thr Leu Glu His Met Glu Thr Glu Arg Leu Glu
    1145   1150   1155

Leu Ala Gln Lys Leu Asn Glu Asn Tyr Glu Glu Val Lys Ser Ile
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Thr Lys Glu Arg Lys Val Leu Lys Glu Leu Gln Lys Ser Phe Glu
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Thr Glu  Arg Asp His Leu Arg  Gly Tyr Ile Arg  Glu  Ile Glu Ala
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Thr Gly  Leu Gln Thr Lys Glu  Glu Leu Lys Ile  Ala  His Ile His
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Leu Lys  Glu His Gln Glu Thr  Ile Asp Glu Leu  Arg  Arg Ser Val
    1220             1225              1230

Ser Glu  Lys Thr Ala Gln Ile  Ile Asn Thr Gln  Asp  Leu Glu Lys
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Ser His  Thr Lys Leu Gln Glu  Glu Ile Pro Val  Leu  His Glu Glu
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Gln Glu  Leu Leu Pro Asn Val  Lys Lys Val Ser  Glu  Thr Gln Glu
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Thr Met  Asn Glu Leu Glu Leu  Leu Thr Glu Gln  Ser  Thr Thr Lys
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Asp Ser  Thr Thr Leu Ala Arg  Ile Glu Met Glu  Arg  Leu Arg Leu
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Asn Glu  Lys Phe Gln Glu Ser  Gln Glu Glu Ile  Lys  Ser Leu Thr
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Lys Glu  Arg Asp Asn Leu Lys  Thr Ile Lys Glu  Ala  Leu Glu Val
    1325             1330              1335

Lys His  Asp Gln Leu Lys Glu  His Ile Arg Glu  Thr  Leu Ala Lys
    1340             1345              1350

Ile Gln  Glu Ser Gln Ser Lys  Gln Glu Gln Ser  Leu  Asn Met Lys
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Glu Lys  Asp Asn Glu Thr Thr  Lys Ile Val Ser  Glu  Met Glu Gln
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Phe Lys  Pro Lys Asp Ser Ala  Leu Leu Arg Ile  Glu  Ile Glu Met
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Leu Gly  Leu Ser Lys Arg Leu  Gln Glu Ser His  Asp  Glu Met Lys
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Ser Val  Ala Lys Glu Lys Asp  Asp Leu Gln Arg Leu  Gln Glu Val
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Leu Gln  Ser Glu Ser Asp Gln  Leu Lys Glu Asn Ile  Lys Glu Ile
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Val Ala  Lys His Leu Glu Thr  Glu Glu Glu Leu Lys  Val Ala His
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Cys Cys  Leu Lys Glu Gln Glu  Glu Thr Ile Asn Glu  Leu Arg Val
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Asn Leu  Ser Glu Lys Glu Thr  Glu Ile Ser Thr Ile  Gln Lys Gln
    1475             1480             1485


Leu Glu  Ala Ile Asn Asp Lys  Leu Gln Asn Lys Ile  Gln Glu Ile
    1490             1495             1500


Tyr Glu  Lys Glu Glu Gln Leu  Asn Ile Lys Gln Ile  Ser Glu Val
    1505             1510             1515


Gln Glu  Asn Val Asn Glu Leu  Lys Gln Phe Lys Glu  His Arg Lys
    1520             1525             1530


Ala Lys  Asp Ser Ala Leu Gln  Ser Ile Glu Ser Lys  Met Leu Glu
    1535             1540             1545


Leu Thr  Asn Arg Leu Gln Glu  Ser Gln Glu Glu Ile  Gln Ile Met
    1550             1555             1560


Ile Lys  Glu Lys Glu Glu Met  Lys Arg Val Gln Glu  Ala Leu Gln
    1565             1570             1575


Ile Glu  Arg Asp Gln Leu Lys  Glu Asn Thr Lys Glu  Ile Val Ala
    1580             1585             1590


Lys Met  Lys Glu Ser Gln Glu  Lys Glu Tyr Gln Phe  Leu Lys Met
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Thr Ala  Val Asn Glu Thr Gln  Glu Lys Met Cys Glu  Ile Glu His
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Leu Lys  Glu Gln Phe Glu Thr  Gln Lys Leu Asn Leu  Glu Asn Ile
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Glu Thr  Glu Asn Ile Arg Leu  Thr Gln Ile Leu His  Glu Asn Leu
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Glu Glu  Met Arg Ser Val Thr  Lys Glu Arg Asp Asp  Leu Arg Ser
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Val Glu  Glu Thr Leu Lys Val  Glu Arg Asp Gln Leu  Lys Glu Asn
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Leu Arg  Glu Thr Ile Thr Arg  Asp Leu Glu Lys Gln  Glu Glu Leu
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Lys Ile  Val His Met His Leu  Lys Glu His Gln Glu  Thr Ile Asp
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Lys Leu  Arg Gly Ile Val Ser  Glu Lys Thr Asn Glu  Ile Ser Asn
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Met Gln  Lys Asp Leu Glu His  Ser Asn Asp Ala Leu  Lys Ala Gln
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Asp Leu  Lys Ile Gln Glu Glu  Leu Arg Ile Ala His  Met His Leu
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Lys Glu  Gln Gln Glu Thr Ile  Asp Lys Leu Arg Gly  Ile Val Ser
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Glu Lys  Thr Asp Lys Leu Ser  Asn Met Gln Lys Asp  Leu Glu Asn
    1775                 1780                  1785


Ser Asn  Ala Lys Leu Gln Glu  Lys Ile Gln Glu Leu  Lys Ala Asn
    1790                 1795                  1800


Glu His  Gln Leu Ile Thr Leu  Lys Lys Asp Val Asn  Glu Thr Gln
    1805                 1810                  1815


Lys Lys  Val Ser Glu Met Glu  Gln Leu Lys Lys Gln  Ile Lys Asp
    1820                 1825                  1830


Gln Ser  Leu Thr Leu Ser Lys  Leu Glu Ile Glu Asn  Leu Asn Leu
    1835                 1840                  1845
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Ala Gln  Glu Leu His Glu Asn  Leu Glu Glu Met Lys  Ser Val Met
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Lys Glu  Arg Asp Asn Leu Arg  Arg Val Glu Glu Thr  Leu Lys Leu
    1865                  1870                1875

Glu Arg  Asp Gln Leu Lys Glu  Ser Leu Gln Glu Thr  Lys Ala Arg
    1880                  1885                1890

Asp Leu  Glu Ile Gln Gln Glu  Leu Lys Thr Ala Arg  Met Leu Ser
    1895                  1900                1905

Lys Glu  His Lys Glu Thr Val  Asp Lys Leu Arg Glu  Lys Ile Ser
    1910                  1915                1920

Glu Lys  Thr Ile Gln Ile Ser  Asp Ile Gln Lys Asp  Leu Asp Lys
    1925                  1930                1935

Ser Lys  Asp Glu Leu Gln Lys  Lys Asp Arg Gln Asn  His Gln Val
    1940                  1945                1950

Lys Pro  Glu Lys Arg Leu Leu  Ser Asp Gly Gln Gln  His Leu Met
    1955                  1960                1965

Glu Ser  Leu Arg Glu Lys Cys  Ser Arg Ile Lys Glu  Leu Leu Lys
    1970                  1975                1980

Arg Tyr  Ser Glu Met Asp Asp  His Tyr Glu Cys Leu  Asn Arg Leu
    1985                  1990                1995

Ser Leu  Asp Leu Glu Lys Glu  Ile Glu Phe His Arg  Ile Met Lys
    2000                  2005                2010

Lys Leu  Lys Tyr Val Leu Ser  Tyr Val Thr Lys Ile  Lys Glu Glu
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Gln His  Glu Cys Ile Asn Lys  Phe Glu Met Asp Phe  Ile Asp Glu
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Val Glu  Lys Gln Lys Glu Leu  Leu Ile Lys Ile Gln  His Leu Gln
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Gln Asp  Cys Asp Val Pro Ser  Arg Glu Leu Arg Asp  Leu Lys Leu
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Leu Ser  Asn Arg Lys Glu Met  Thr Gln Phe Leu Glu  Glu Trp Leu
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Asn Thr  Arg Phe Asp Ile Glu  Lys Leu Lys Asn Gly  Ile Gln Lys
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Glu Asn  Asp Arg Ile Cys Gln  Val Asn Asn Phe Phe  Asn Asn Arg
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Ile Ile  Ala Ile Met Asn Glu  Ser Thr Glu Phe Glu  Glu Arg Ser
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Ala Thr  Ile Ser Lys Glu Trp  Glu Gln Asp Leu Lys  Ser Leu Lys
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Glu Lys  Asn Glu Lys Leu Phe  Lys Asn Tyr Gln Thr  Leu Lys Thr
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Ser Leu  Ala Ser Gly Ala Gln  Val Asn Pro Thr Thr  Gln Asp Asn
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Lys Asn  Pro His Val Thr Ser  Arg Ala Thr Gln Leu  Thr Thr Glu
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Lys Ile  Arg Glu Leu Glu Asn  Ser Leu His Glu Ala  Lys Glu Ser
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Ala Met  His Lys Glu Ser Lys  Ile Ile Lys Met Gln  Lys Glu Leu
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Glu Val  Thr Asn Asp Ile Ile  Ala Lys Leu Gln Ala  Lys Val His
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Glu Ser  Asn Lys Cys Leu Glu  Lys Thr Lys Glu Thr  Ile Gln Val
    2270                 2275              2280
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Leu Gln Asp Lys Val Ala Leu Gly Ala Lys Pro Tyr Lys Glu Glu
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Ile Glu Asp Leu Lys Met Lys Leu Val Lys Ile Asp Leu Glu Lys
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Ala Thr Val Glu Tyr Gln Lys Glu Val Ile Arg Leu Leu Arg Glu
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Asn Leu Arg Arg Ser Gln Gln Ala Gln Asp Thr Ser Val Ile Ser
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Glu His Thr Asp Pro Gln Pro Ser Asn Lys Pro Leu Thr Cys Gly
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Gly Gly Ser Gly Ile Val Gln Asn Thr Lys Ala Leu Ile Leu Lys
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Ser Glu His Ile Arg Leu Glu Lys Glu Ile Ser Lys Leu Lys Gln
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Gln Asn Glu Gln Leu Ile Lys Gln Lys Asn Glu Leu Leu Ser Asn
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Asn Gln His Leu Ser Asn Glu Val Lys Thr Trp Lys Glu Arg Thr
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Leu Lys Arg Glu Ala His Lys Gln Val Thr Cys Glu Asn Ser Pro
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Lys Ser Pro Lys Val Thr Gly Thr Ala Ser Lys Lys Lys Gln Ile
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Thr Pro Ser Gln Cys Lys Glu Arg Asn Leu Gln Asp Pro Val Pro
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Lys Glu Ser Pro Lys Ser Cys Phe Phe Asp Ser Arg Ser Lys Ser
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Leu Pro Ser Pro His Pro Val Arg Tyr Phe Asp Asn Ser Ser Leu
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ctaaaaactg ctcgtatgct atcaaaagaa cacaaagaaa ctgttgataa acttagagaa   5640

aaaatttcag aaaagacaat tcaaatttca gacattcaaa aggatttaga taaatcaaaa   5700

gatgaattac agaaaaagga ccgacagaac caccaagtaa aacctgaaaa aaggttacta   5760

agtgatggac aacagcacct tatggaaagc ctgagagaaa agtgctctag aataaaagag   5820

ctttttgaaga gatactcaga gatggatgat cattatgagt gcttgaatag attgtctctt   5880

gacttggaga aggaaattga attccacaga atcatgaaga aactgaagta tgtgttaagc   5940

tatgttacaa aaataaaaga agaacaacat gaatgcatca ataaatttga aatggatttt   6000

attgatgaag tggaaaagca aaaggaattg ctaattaaaa tacagcacct tcaacaagat   6060

tgtgatgtac catccagaga attaagggat ctcaaattga accagaatat ggatctacat   6120

attgaggaaa ttctcaaaga tttctcagaa agtgagttcc ctagcataaa gactgaattt   6180

caacaagtac taagtaatag gaaagaaatg acacagtttt tggaagagtg gttaaatact   6240

cgttttgata tagaaaagct taaaaatggc atccagaaag aaaatgatag gatttgtcaa   6300

gtgaataact ctttaataa cagaataatt gccataatga atgaatcaac agagtttgag   6360

gaaagaagtg ctaccatatc caaagagtgg gaacaggacc tgaaatcact gaaagagaaa   6420

aatgaaaaac tatttaaaaa ctaccaaaca ttgaagactt ccttggcatc tggtgcccag   6480

gttaatccta ccacacaaga caataagaat cctcatgtta catcaagagc tacacagtta   6540
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accacagaga aaattcgaga gctggaaaat tcactgcatg aagctaaaga aagtgctatg    6600

cataaggaaa gcaagattat aaagatgcag aaagaacttg aggtgactaa tgacataata    6660

gcaaaacttc aagccaaagt tcatgaatca aataaatgcc ttgaaaaaac aaaagagaca    6720

attcaagtac ttcaggacaa agttgcttta ggagctaagc catataaaga agaaattgaa    6780

gatctcaaaa tgaagcttgt gaaaatagac ctagagaaaa tgaaaaatgc caaagaattt    6840

gaaaaggaaa tcagtgctac aaaagccact gtagaatatc aaaaggaagt tataaggcta    6900

ttgagagaaa atctcagaag aagtcaacag gcccaagata cctcagtgat atcagaacat    6960

actgatcctc agccttcaaa taaaccctta acttgtggag gtggcagcgg cattgtacaa    7020

aacacaaaag ctcttatttt gaaaagtgaa catataaggc tagaaaaaga aatttctaag    7080

ttaaagcagc aaaatgaaca gctaataaaa caaagaatg aattgttaag caataatcag    7140

catctttcca atgaggtcaa aacttggaag gaaagaaccc ttaaaagaga ggctcacaaa    7200

caagtaactt gtgagaattc tccaaagtct cctaaagtga ctggaacagc ttctaaaaag    7260

aaacaaatta caccctctca atgcaaggaa cggaatttac aagatcctgt gccaaaggaa    7320

tcaccaaaat cttgtttttt tgatagccga tcaaagtctt taccatcacc tcatccagtt    7380

cgctattttg ataactcaag tttaggcctt tgtccagagg tgcaaaatgc aggagcagag    7440

agtgtggatt ctcagccagg tccttggcac gcctcctcag gcaaggatgt gcctgagtgc    7500

aaaactcag                                                            7509


<210>  11
<211>  2503
<212>  PRT
<213>  Homo sapiens

<400>  11

Met Ala Glu Glu Gly Ala Val Ala Val Cys Val Arg Val Arg Pro Leu
1                5                  10                  15


Asn Ser Arg Glu Glu Ser Leu Gly Glu Thr Ala Gln Val Tyr Trp Lys
                20                  25                  30


Thr Asp Asn Asn Val Ile Tyr Gln Val Asp Gly Ser Lys Ser Phe Asn
            35                  40                  45


Phe Asp Arg Val Phe His Gly Asn Glu Thr Thr Lys Asn Val Tyr Glu
        50                  55                  60
```

```
Glu Ile Ala Ala Pro Ile Ile Asp Ser Ala Ile Gln Gly Tyr Asn Gly
65              70              75                      80


Thr Ile Phe Ala Tyr Gly Gln Thr Ala Ser Gly Lys Thr Tyr Thr Met
                85              90                      95


Met Gly Ser Glu Asp His Leu Gly Val Ile Pro Arg Ala Ile His Asp
            100             105             110


Ile Phe Gln Lys Ile Lys Lys Phe Pro Asp Arg Glu Phe Leu Leu Arg
        115             120             125


Val Ser Tyr Met Glu Ile Tyr Asn Glu Thr Ile Thr Asp Leu Leu Cys
    130             135             140


Gly Thr Gln Lys Met Lys Pro Leu Ile Ile Arg Glu Asp Val Asn Arg
145   .         150             155                 160


Asn Val Tyr Val Ala Asp Leu Thr Glu Glu Val Val Tyr Thr Ser Glu
            165             170             175


Met Ala Leu Lys Trp Ile Thr Lys Gly Glu Lys Ser Arg His Tyr Gly
        180             185             190


Glu Thr Lys Met Asn Gln Arg Ser Ser Arg Ser His Thr Ile Phe Arg
    195             200             205


Met Ile Leu Glu Ser Arg Glu Lys Gly Glu Pro Ser Asn Cys Glu Gly
    210             215             220


Ser Val Lys Val Ser His Leu Asn Leu Val Asp Leu Ala Gly Ser Glu
225             230             235             240


Arg Ala Ala Gln Thr Gly Ala Ala Gly Val Arg Leu Lys Glu Gly Cys
            245             250             255


Asn Ile Asn Arg Ser Leu Phe Ile Leu Gly Gln Val Ile Lys Lys Leu
            260             265             270


Ser Asp Gly Gln Val Gly Gly Phe Ile Asn Tyr Arg Asp Ser Lys Leu
    275             280             285


Thr Arg Ile Leu Gln Asn Ser Leu Gly Gly Asn Ala Lys Thr Arg Ile
    290             295             300
```

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```
Ile Cys Thr Ile Thr Pro Val Ser Phe Asp Glu Thr Leu Thr Ala Leu
305             310             315             320


Gln Phe Ala Ser Thr Ala Lys Tyr Met Lys Asn Thr Pro Tyr Val Asn
            325             330             335


Glu Val Ser Thr Asp Glu Ala Leu Leu Lys Arg Tyr Arg Lys Glu Ile
            340             345             350


Met Asp Leu Lys Lys Gln Leu Glu Glu Val Ser Leu Glu Thr Arg Ala
            355             360             365


Gln Ala Met Glu Lys Asp Gln Leu Ala Gln Leu Leu Glu Glu Lys Asp
            370             375             380


Leu Leu Gln Lys Val Gln Asn Glu Lys Ile Glu Asn Leu Thr Arg Met
385             390             395             400


Leu Val Thr Ser Ser Ser Leu Thr Leu Gln Gln Glu Leu Lys Ala Lys
            405             410             415


Arg Lys Arg Arg Val Thr Trp Cys Leu Gly Lys Ile Asn Lys Met Lys
            420             425             430


Asn Ser Asn Tyr Ala Asp Gln Phe Asn Ile Pro Thr Asn Ile Thr Thr
            435             440             445


Lys Thr His Lys Leu Ser Ile Asn Leu Leu Arg Glu Ile Asp Glu Ser
    450             455             460


Val Cys Ser Glu Ser Asp Val Phe Ser Asn Thr Leu Asp Thr Leu Ser
465             470             475             480


Glu Ile Glu Trp Asn Pro Ala Thr Lys Leu Leu Asn Gln Glu Asn Ile
            485             490             495


Glu Ser Glu Leu Asn Ser Leu Arg Ala Asp Tyr Asp Asn Leu Val Leu
            500             505             510


Asp Tyr Glu Gln Leu Arg Thr Glu Lys Glu Glu Met Glu Leu Lys Leu
            515             520             525
```

```
Lys Glu Lys Asn Asp Leu Asp Glu Phe Glu Ala Leu Glu Arg Lys Thr
    530             535             540

Lys Lys Asp Gln Glu Glu Ser Ile Glu Asp Pro Lys Gln Met Lys Gln
545             550             555             560

Thr Leu Phe Asp Ala Glu Thr Val Ala Leu Asp Ala Lys Arg Glu Ser
            565             570             575

Ala Phe Leu Arg Ser Glu Asn Leu Glu Leu Lys Glu Lys Met Lys Glu
            580             585             590

Leu Ala Thr Thr Tyr Lys Gln Met Glu Asn Asp Ile Gln Leu Tyr Gln
            595             600             605

Ser Gln Leu Glu Ala Lys Lys Lys Met Gln Val Asp Leu Glu Lys Glu
    610             615             620

Leu Gln Ser Ala Phe Asn Glu Ile Thr Lys Leu Thr Ser Leu Ile Asp
625             630             635             640

Gly Lys Val Pro Lys Asp Leu Leu Cys Asn Leu Glu Leu Glu Gly Lys
            645             650             655

Ile Thr Asp Leu Gln Lys Glu Leu Asn Lys Glu Val Glu Glu Asn Glu
            660             665             670

Ala Leu Arg Glu Glu Val Ile Leu Leu Ser Glu Leu Lys Ser Leu Pro
    675             680             685

Ser Glu Val Glu Arg Leu Arg Lys Glu Ile Gln Asp Lys Ser Glu Glu
    690             695             700

Leu His Ile Ile Thr Ser Glu Lys Asp Lys Leu Phe Ser Glu Val Val
705             710             715             720

His Lys Glu Ser Arg Val Gln Gly Leu Leu Glu Glu Ile Gly Lys Thr
            725             730             735

Lys Asp Asp Leu Ala Thr Thr Gln Ser Asn Tyr Lys Ser Thr Asp Gln
            740             745             750

Glu Phe Gln Asn Phe Lys Thr Leu His Met Asp Phe Glu Gln Lys Tyr
    755             760             765
```

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```
Lys Met Val Leu Glu Glu Asn Glu Arg Met Asn Gln Glu Ile Val Asn
    770             775             780

Leu Ser Lys Glu Ala Gln Lys Phe Asp Ser Ser Leu Gly Ala Leu Lys
    785             790             795             800

Thr Glu Leu Ser Tyr Lys Thr Gln Glu Leu Gln Glu Lys Thr Arg Glu
                805             810             815

Val Gln Glu Arg Leu Asn Glu Met Glu Gln Leu Lys Glu Gln Leu Glu
            820             825             830

Asn Arg Asp Ser Pro Leu Gln Thr Val Glu Arg Glu Lys Thr Leu Ile
        835             840             845

Thr Glu Lys Leu Gln Gln Thr Leu Glu Glu Val Lys Thr Leu Thr Gln
    850             855             860

Glu Lys Asp Asp Leu Lys Gln Leu Gln Glu Ser Leu Gln Ile Glu Arg
865             870             875             880

Asp Gln Leu Lys Ser Asp Ile His Asp Thr Val Asn Met Asn Ile Asp
                885             890             895

Thr Gln Glu Gln Leu Arg Asn Ala Leu Glu Ser Leu Lys Gln His Gln
        900             905             910

Glu Thr Ile Asn Thr Leu Lys Ser Lys Ile Ser Glu Glu Val Ser Arg
        915             920             925

Asn Leu His Met Glu Glu Asn Thr Gly Glu Thr Lys Asp Glu Phe Gln
    930             935             940

Gln Lys Met Val Gly Ile Asp Lys Lys Gln Asp Leu Glu Ala Lys Asn
945             950             955             960

Thr Gln Thr Leu Thr Ala Asp Val Lys Asp Asn Glu Ile Ile Glu Gln
            965             970             975

Gln Arg Lys Ile Phe Ser Leu Ile Gln Glu Lys Asn Glu Leu Gln Gln
            980             985             990

Met Leu Glu Ser Val Ile Ala Glu  Lys Glu Gln Leu Lys  Thr Asp Leu
    995             1000            1005
```

```
Lys Glu  Asn Ile Glu Met Thr  Ile Glu Asn Gln Glu  Glu Leu Arg
    1010             1015              1020


Leu Leu  Gly Asp Glu Leu Lys  Lys Gln Gln Glu Ile  Val Ala Gln
    1025             1030              1035


Glu Lys  Asn His Ala Ile Lys  Lys Glu Gly Glu Leu  Ser Arg Thr
    1040             1045              1050


Cys Asp  Arg Leu Ala Glu Val  Glu Glu Lys Leu Lys  Glu Lys Ser
    1055             1060              1065


Gln Gln  Leu Gln Glu Lys Gln  Gln Gln Leu Leu Asn  Val Gln Glu
    1070             1075              1080


Glu Met  Ser Glu Met Gln Lys  Lys Ile Asn Glu Ile  Glu Asn Leu
    1085             1090              1095


Lys Asn  Glu Leu Lys Asn Lys  Glu Leu Thr Leu Glu  His Met Glu
    1100             1105              1110


Thr Glu  Arg Leu Glu Leu Ala  Gln Lys Leu Asn Glu  Asn Tyr Glu
    1115             1120              1125


Glu Val  Lys Ser Ile Thr Lys  Glu Arg Lys Val Leu  Lys Glu Leu
    1130             1135              1140


Gln Lys  Ser Phe Glu Thr Glu  Arg Asp His Leu Arg  Gly Tyr Ile
    1145             1150              1155


Arg Glu  Ile Glu Ala Thr Gly  Leu Gln Thr Lys Glu  Glu Leu Lys
    1160             1165              1170


Ile Ala  His Ile His Leu Lys  Glu His Gln Glu Thr  Ile Asp Glu
    1175             1180              1185


Leu Arg  Arg Ser Val Ser Glu  Lys Thr Ala Gln Ile  Ile Asn Thr
    1190             1195              1200


Gln Asp  Leu Glu Lys Ser His  Thr Lys Leu Gln Glu  Glu Ile Pro
    1205             1210              1215
```

```
Val Leu  His Glu Glu Gln Glu  Leu Leu Pro Asn Val  Lys Lys Val
    1220                 1225             1230

Ser Glu  Thr Gln Glu Thr Met  Asn Glu Leu Glu Leu  Leu Thr Glu
    1235                 1240             1245

Gln Ser  Thr Thr Lys Asp Ser  Thr Thr Leu Ala Arg  Ile Glu Met
    1250                 1255             1260

Glu Arg  Leu Arg Leu Asn Glu  Lys Phe Gln Glu Ser  Gln Glu Glu
    1265                 1270             1275

Ile Lys  Ser Leu Thr Lys Glu  Arg Asp Asn Leu Lys  Thr Ile Lys
    1280                 1285             1290

Glu Ala  Leu Glu Val Lys His  Asp Gln Leu Lys Glu  His Ile Arg
    1295                 1300             1305

Glu Thr  Leu Ala Lys Ile Gln  Glu Ser Gln Ser Lys  Gln Glu Gln
    1310                 1315             1320

Ser Leu  Asn Met Lys Glu Lys  Asp Asn Glu Thr Thr  Lys Ile Val
    1325                 1330             1335

Ser Glu  Met Glu Gln Phe Lys  Pro Lys Asp Ser Ala  Leu Leu Arg
    1340                 1345             1350

Ile Glu  Ile Glu Met Leu Gly  Leu Ser Lys Arg Leu  Gln Glu Ser
    1355                 1360             1365

His Asp  Glu Met Lys Ser Val  Ala Lys Glu Lys Asp  Asp Leu Gln
    1370                 1375             1380

Arg Leu  Gln Glu Val Leu Gln  Ser Glu Ser Asp Gln  Leu Lys Glu
    1385                 1390             1395

Asn Ile  Lys Glu Ile Val Ala  Lys His Leu Glu Thr  Glu Glu Glu
    1400                 1405             1410

Leu Lys  Val Ala His Cys Cys  Leu Lys Glu Gln Glu  Glu Thr Ile
    1415                 1420             1425

Asn Glu  Leu Arg Val Asn Leu  Ser Glu Lys Glu Thr  Glu Ile Ser
    1430                 1435             1440
```

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```
Thr Ile  Gln Lys Gln Leu Glu  Ala Ile Asn Asp Lys  Leu Gln Asn
    1445             1450             1455

Lys Ile  Gln Glu Ile Tyr Glu  Lys Glu Glu Gln Leu  Asn Ile Lys
    1460             1465             1470

Gln Ile  Ser Glu Val Gln Glu  Asn Val Asn Glu Leu  Lys Gln Phe
    1475             1480             1485

Lys Glu  His Arg Lys Ala Lys  Asp Ser Ala Leu Gln  Ser Ile Glu
    1490             1495             1500

Ser Lys  Met Leu Glu Leu Thr  Asn Arg Leu Gln Glu  Ser Gln Glu
    1505             1510             1515

Glu Ile  Gln Ile Met Ile Lys  Glu Lys Glu Glu Met  Lys Arg Val
    1520             1525             1530

Gln Glu  Ala Leu Gln Ile Glu  Arg Asp Gln Leu Lys  Glu Asn Thr
    1535             1540             1545

Lys Glu  Ile Val Ala Lys Met  Lys Glu Ser Gln Glu  Lys Glu Tyr
    1550             1555             1560

Gln Phe  Leu Lys Met Thr Ala  Val Asn Glu Thr Gln  Glu Lys Met
    1565             1570             1575

Cys Glu  Ile Glu His Leu Lys  Glu Gln Phe Glu Thr  Gln Lys Leu
    1580             1585             1590

Asn Leu  Glu Asn Ile Glu Thr  Glu Asn Ile Arg Leu  Thr Gln Ile
    1595             1600             1605

Leu His  Glu Asn Leu Glu Glu  Met Arg Ser Val Thr  Lys Glu Arg
    1610             1615             1620

Asp Asp  Leu Arg Ser Val Glu  Glu Thr Leu Lys Val  Glu Arg Asp
    1625             1630             1635

Gln Leu  Lys Glu Asn Leu Arg  Glu Thr Ile Thr Arg  Asp Leu Glu
    1640             1645             1650

Lys Gln  Glu Glu Leu Lys Ile  Val His Met His Leu  Lys Glu His
    1655             1660             1665
```

```
Gln Glu  Thr Ile Asp Lys Leu  Arg Gly Ile Val Ser  Glu Lys Thr
    1670             1675             1680


Asn Glu  Ile Ser Asn Met Gln  Lys Asp Leu Glu His  Ser Asn Asp
    1685             1690             1695


Ala Leu  Lys Ala Gln Asp Leu  Lys Ile Gln Glu Glu  Leu Arg Ile
    1700             1705             1710


Ala His  Met His Leu Lys Glu  Gln Gln Glu Thr Ile  Asp Lys Leu
    1715             1720             1725


Arg Gly  Ile Val Ser Glu Lys  Thr Asp Lys Leu Ser  Asn Met Gln
    1730             1735             1740


Lys Asp  Leu Glu Asn Ser Asn  Ala Lys Leu Gln Glu  Lys Ile Gln
    1745             1750             1755


Glu Leu  Lys Ala Asn Glu His  Gln Leu Ile Thr Leu  Lys Lys Asp
    1760             1765             1770


Val Asn  Glu Thr Gln Lys Lys  Val Ser Glu Met Glu  Gln Leu Lys
    1775             1780             1785


Lys Gln  Ile Lys Asp Gln Ser  Leu Thr Leu Ser Lys  Leu Glu Ile
    1790             1795             1800


Glu Asn  Leu Asn Leu Ala Gln  Glu Leu His Glu Asn  Leu Glu Glu
    1805             1810             1815


Met Lys  Ser Val Met Lys Glu  Arg Asp Asn Leu Arg  Arg Val Glu
    1820             1825             1830


Glu Thr  Leu Lys Leu Glu Arg  Asp Gln Leu Lys Glu  Ser Leu Gln
    1835             1840             1845


Glu Thr  Lys Ala Arg Asp Leu  Glu Ile Gln Gln Glu  Leu Lys Thr
    1850             1855             1860


Ala Arg  Met Leu Ser Lys Glu  His Lys Glu Thr Val  Asp Lys Leu
    1865             1870             1875
```

Arg Glu   Lys Ile Ser Glu Lys   Thr Ile Gln Ile Ser   Asp Ile Gln
    1880   1885   1890

Lys Asp   Leu Asp Lys Ser Lys   Asp Glu Leu Gln Lys   Lys Asp Arg
    1895   1900   1905

Gln Asn   His Gln Val Lys Pro   Glu Lys Arg Leu Leu   Ser Asp Gly
    1910   1915   1920

Gln Gln   His Leu Met Glu Ser   Leu Arg Glu Lys Cys   Ser Arg Ile
    1925   1930   1935

Lys Glu   Leu Leu Lys Arg Tyr   Ser Glu Met Asp Asp   His Tyr Glu
    1940   1945   1950

Cys Leu   Asn Arg Leu Ser Leu   Asp Leu Glu Lys Glu   Ile Glu Phe
    1955   1960   1965

His Arg   Ile Met Lys Lys Leu   Lys Tyr Val Leu Ser   Tyr Val Thr
    1970   1975   1980

Lys Ile   Lys Glu Glu Gln His   Glu Cys Ile Asn Lys   Phe Glu Met
    1985   1990   1995

Asp Phe   Ile Asp Glu Val Glu   Lys Gln Lys Glu Leu   Leu Ile Lys
    2000   2005   2010

Ile Gln   His Leu Gln Gln Asp   Cys Asp Val Pro Ser   Arg Glu Leu
    2015   2020   2025

Arg Asp   Leu Lys Leu Asn Gln   Asn Met Asp Leu His . Ile Glu Glu
    2030   2035   2040

Ile Leu   Lys Asp Phe Ser Glu   Ser Glu Phe Pro Ser   Ile Lys Thr
    2045   2050   2055

Glu Phe   Gln Gln Val Leu Ser   Asn Arg Lys Glu Met   Thr Gln Phe
    2060   2065   2070

Leu Glu   Glu Trp Leu Asn Thr   Arg Phe Asp Ile Glu   Lys Leu Lys
    2075   2080   2085

Asn Gly   Ile Gln Lys Glu Asn   Asp Arg Ile Cys Gln   Val Asn Asn
    2090   2095   2100

Phe Phe Asn Asn Arg Ile Ile Ala Ile Met Asn Glu Ser Thr Glu
    2105   2110   2115

Phe Glu Glu Arg Ser Ala Thr Ile Ser Lys Glu Trp Glu Gln Asp
    2120   2125   2130

Leu Lys Ser Leu Lys Glu Lys Asn Glu Lys Leu Phe Lys Asn Tyr
    2135   2140   2145

Gln Thr Leu Lys Thr Ser Leu Ala Ser Gly Ala Gln Val Asn Pro
    2150   2155   2160

Thr Thr Gln Asp Asn Lys Asn Pro His Val Thr Ser Arg Ala Thr
    2165   2170   2175

Gln Leu Thr Thr Glu Lys Ile Arg Glu Leu Glu Asn Ser Leu His
    2180   2185   2190

Glu Ala Lys Glu Ser Ala Met His Lys Glu Ser Lys Ile Ile Lys
    2195   2200   2205

Met Gln Lys Glu Leu Glu Val Thr Asn Asp Ile Ile Ala Lys Leu
    2210   2215   2220

Gln Ala Lys Val His Glu Ser Asn Lys Cys Leu Glu Lys Thr Lys
    2225   2230   2235

Glu Thr Ile Gln Val Leu Gln Asp Lys Val Ala Leu Gly Ala Lys
    2240   2245   2250

Pro Tyr Lys Glu Glu Ile Glu Asp Leu Lys Met Lys Leu Val Lys
    2255   2260   2265

Ile Asp Leu Glu Lys Met Lys Asn Ala Lys Glu Phe Glu Lys Glu
    2270   2275   2280

Ile Ser Ala Thr Lys Ala Thr Val Glu Tyr Gln Lys Glu Val Ile
    2285   2290   2295

Arg Leu Leu Arg Glu Asn Leu Arg Arg Ser Gln Gln Ala Gln Asp
    2300   2305   2310

Thr Ser Val Ile Ser Glu His Thr Asp Pro Gln Pro Ser Asn Lys
    2315   2320   2325

```
Pro Leu  Thr Cys Gly Gly Gly  Ser Gly Ile Val Gln  Asn Thr Lys
    2330             2335              2340

Ala Leu  Ile Leu Lys Ser Glu  His Ile Arg Leu Glu  Lys Glu Ile
    2345             2350              2355

Ser Lys  Leu Lys Gln Gln Asn  Glu Gln Leu Ile Lys  Gln Lys Asn
    2360             2365              2370

Glu Leu  Leu Ser Asn Asn Gln  His Leu Ser Asn Glu  Val Lys Thr
    2375             2380              2385

Trp Lys  Glu Arg Thr Leu Lys  Arg Glu Ala His Lys  Gln Val Thr
    2390             2395              2400

Cys Glu  Asn Ser Pro Lys Ser  Pro Lys Val Thr Gly  Thr Ala Ser
    2405             2410              2415

Lys Lys  Lys Gln Ile Thr Pro  Ser Gln Cys Lys Glu  Arg Asn Leu
    2420             2425              2430

Gln Asp  Pro Val Pro Lys Glu  Ser Pro Lys Ser Cys  Phe Phe Asp
    2435             2440              2445

Ser Arg  Ser Lys Ser Leu Pro  Ser Pro His Pro Val  Arg Tyr Phe
    2450             2455              2460

Asp Asn  Ser Ser Leu Gly Leu  Cys Pro Glu Val Gln  Asn Ala Gly
    2465             2470              2475

Ala Glu  Ser Val Asp Ser Gln  Pro Gly Pro Trp His  Ala Ser Ser
    2480             2485              2490

Gly Lys  Asp Val Pro Glu Cys  Lys Thr Gln
    2495             2500
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<210> 12
<211> 20
<212> DNA
<213> Homo sapiens

<400> 12
acagaaaaag gaccgacaga   20

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<210>   13
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<212>   DNA
<213>   Homo sapiens

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agatcaagag aatgaactca                                                    20


<210>   14
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<212>   DNA
<213>   Homo sapiens

<400>   14
agatcaagag gaaagcattg                                                    20


<210>   15
<211>   10
<212>   PRT
<213>   Homo sapiens

<400>   15

Glu Leu Gln Lys Lys Asp Arg Gln Asn His
1               5               10


<210>   16
<211>   10
<212>   PRT
<213>   Homo sapiens

<400>   16

Lys Lys Asp Gln Glu Asn Glu Leu Ser Ser
1               5               10


<210>   17
<211>   10
<212>   PRT
<213>   Homo sapiens

<400>   17

Lys Lys Asp Gln Glu Glu Ser Ile Glu Asp
1               5               10


<210>   18
<211>   285
<212>   DNA
<213>   Homo sapiens

<400>   18
atccaagaac ttcagaaaaa agaacttcaa ctgcttagag tgaaagaaga tgtcaatatg   60
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agtcataaaa aaattaatga aatggaacag ttgaagaagc aatttgagcc aaactatcta      120

tgcaagtgtg agatggataa cttccagttg actaagaaac ttcatgaaag ccttgaagaa      180

ataagaattg tagctaaaga aagagatgag ctaaggagga taaaagaatc tctcaaaatg      240

gaaagggacc aattcatagc aaccttaagg gaaatgatag ctaga                      285
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<210> 19
<211> 95
<212> PRT
<213> Homo sapiens

<400> 19

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Ile Gln Glu Leu Gln Lys Lys Glu Leu Gln Leu Leu Arg Val Lys Glu
1               5                   10                  15

Asp Val Asn Met Ser His Lys Lys Ile Asn Glu Met Glu Gln Leu Lys
            20                  25                  30

Lys Gln Phe Glu Pro Asn Tyr Leu Cys Lys Cys Glu Met Asp Asn Phe
        35                  40                  45

Gln Leu Thr Lys Lys Leu His Glu Ser Leu Glu Glu Ile Arg Ile Val
    50                  55                  60

Ala Lys Glu Arg Asp Glu Leu Arg Arg Ile Lys Glu Ser Leu Lys Met
65                  70                  75                  80

Glu Arg Asp Gln Phe Ile Ala Thr Leu Arg Glu Met Ile Ala Arg
                85                  90                  95
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<212> DNA
<213> Homo sapiens

<400> 20
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caacaggaac taaaaactgc tcgtatgc                                          28
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<210> 21
<211> 28
<212> DNA
<213> Homo sapiens

<400> 21
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aggctttcca taaggtgctg ttgtccat                                          28
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<210> 22
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<212> DNA
<213> Homo sapiens

<400> 22
taacacggat gctggtgacc tcttcttc   28

<210> 23
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<212> DNA
<213> Homo sapiens

<400> 23
aaaggctgat tctctcttgg catcaagg   28

<210> 24
<211> 28
<212> DNA
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<400> 24
atggcggagg aaggagccgt ggccgtct   28

<210> 25
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ctactgagtt ttgcactcag gcacatcc   28